Title (en)

VPSA PROCESS AND SYStEM FOR ENHANCED OXYGEN RECOVERY

Title (de)

VPSA-VERFAHREN UND -ANLAGE MIT ERHÖHTER SAUERSTOFFRÜCKGEWINNUNG

Title (fr)

PROCESSUS ET DISPOSITIF D'ADSORPTION MODULÉE EN PRESSION DE VAPEUR ET EXTRACTION AMÉLIORÉE D'OXYGÈNE

Publication

EP 2046483 B1 20180822 (EN)

Application

EP 07810198 A 20070703

Priority

- US 2007015475 W 20070703
- US 48083306 A 20060706

Abstract (en)

[origin: WO2008005492A1] Novel polybed VPSA process and system to achieve enhanced O₂ recovery are disclosed. The VPSA process comprises using three or more adsorber beds; providing a continuous feed supply gas using a single feed blower to one bed, wherein at any instant during the process, two beds are in an evacuation step and only one bed is in a feed mode; and purging the adsorber beds using two purge gases of different purity. The VPSA cycle may further comprise utilizing a storage device (e.g., a packed or empty equalization tank) to capture void gases during co-current depressurization step of the VPSA cycle, which is used at a later stage for purging and repressurization of the bed. In addition, the VPSA process employs a single feed compressor and two vacuum pumps at 100% utilization. Furthermore, the use of the storage device minimizes the use of product quality gas for purging. About 10-20% improvement in O₂ productivity is realized in the new VPSA process.

IPC 8 full level

B01D 53/053 (2006.01)

CPC (source: EP KR US)

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Citation (opposition)

Opponent : L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCESDES GEORGES CLAUDE

- EP 0791388 B1 20000906 - AIR PROD & CHEM [US]
- EP 0248922 B1 19900912
- US 5656068 A 19970812 - SMOLAREK JAMES [US], et al
- FR 2672818 A1 19920821 - AIR LIQUIDE [FR]

Opponent : TECHNOLOGY INC

- EP 0791388 B1 20000906 - AIR PROD & CHEM [US]
- EP 0248922 B1 19900912
- US 5656068 A 19970812 - SMOLAREK JAMES [US], et al
- FR 2672818 A1 19920821 - AIR LIQUIDE [FR]

Designated contracting state (EPC)

DE ES FR IT

DOCDB simple family (publication)

WO 2008005492 A1 20080110; BR PI0714015 A2 20121204; BR PI0714015 B1 20180814; CA 2656692 A1 20080110; CA 2656692 C 20130430; CN 101511448 A 20090819; CN 101511448 B 20130313; EP 2046483 A1 20090415; EP 2046483 B1 20180822; ES 2688608 T3 20181105; KR 20090037448 A 20090415; MX 2009000221 A 20090223; US 2008006151 A1 20080110; US 7763100 B2 20100727

DOCDB simple family (application)

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